UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 Renner Boulevard
Lenexa, Kansas 66219

MEMORANDUM

SUBJECT: Removal Action at 500 Chestnut Street
PCE Chestnut Street – RV-2
Atlantic, Iowa

FROM: Jeff Pritchard, On-Scene Coordinator JP 5-26-17
AERR/RRSS

TO: Site File:
CERCLIS ID No. IAN000703467
Site ID: B7A4 - RV-2

This memorandum to the site file is to serve as documentation of removal action activities completed at the PCE Chestnut Street site, specific to the building at 500 Chestnut Street. The U.S. Environmental Protection Agency (EPA) conducted removal activities at the 500 Chestnut Street building to address elevated concentrations of tetrachloroethene (PCE) detected in indoor air samples. The removal activities summarized in this memorandum were conducted from September 2016 through May 2017. Previously conducted removal activities, which involved removal and disposal of chemical materials that had been abandoned inside the building, were documented in a Removal Action Report (dated February 25, 2016) completed by Tetra Tech.

During the week of September 5, 2016, EPA removed dry cleaning-related equipment from the 500 Chestnut Street building for proper disposal. Additionally, a portion of the carpet inside the building was also removed for disposal. A sample of the carpet was collected and laboratory results determined it contained PCE at 184 milligrams per kilogram (mg/kg). Following those activities, an indoor air sample was collected on September 13, 2016, and results determined that PCE was still present at 286 micrograms per cubic meter ($\mu g/m^3$), well above the EPA removal action level established for residential properties, which is 42 $\mu g/m^3$. Based on those results, samples of the building's flooring, wallboard, and ceiling tiles were collected to determine if removal of those items was warranted. Sample results determined flooring in the vicinity of the former dry cleaning equipment was contaminated with PCE (contained PCE up to 4,410 mg/kg) likely as a result of historical spills/operations. During the week of October 10, 2016, EPA removed the contaminated wood flooring for proper disposal. Following those activities, EPA collected an indoor air sample on November 17, 2016, and laboratory results determined PCE was present at 5.3 $\mu g/m^3$, well below its residential removal action level of 42 $\mu g/m^3$. These sample results indicate that EPA's removal of PCE-contaminated materials from inside the 500 Chestnut Street building were effective in lowering the concentration of PCE in indoor air to below levels of health concern. A copy of carpet and flooring disposal documentation is

included as Attachment A. Photographs of removal activities are included as Attachment B. Analytical sample results from the samples discussed above are included as Attachment C.

During the week of February 13, 2017, EPA collected soil samples from locations inside the basement of the 500 Chestnut Street building. Those samples were collected to determine if historical operations as a dry cleaner had resulted in contamination of underlying soil. A map of the sample locations is included as Attachment D. Samples collected from these locations were analyzed for site contaminants of concern by the EPA Region 7 laboratory. PCE was not detected above laboratory detection limits in any of the samples. The table included as Attachment E summarizes PCE concentrations in the soil samples.

An agreement concerning repair and restoration of the flooring and associated building materials removed/disposed of during the removal action was signed by the property owner on May 18, 2017. This agreement is included as Attachment F.

All of the analytical data results have been submitted to the site file and will be uploaded into the project Scribe database. Data transmittal letters summarizing the discussed sampling activities have been sent to the property owner of 500 Chestnut Street, [redacted]. Based on the most recent indoor air and soil sample results, no additional removal activities are currently planned for the 500 Chestnut Street building.

Attachments

ATTACHMENT A

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 7Q 1603762558 SC PPW 11/2/2016 Form Approved. OMB No. 2050-0039

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
[redacted] IAR000521971	1	(800) 483-3718	009870357 FLE

GENERATOR

5. Generator's Name and Mailing Address
Former Dry Cleaner
US EPA Region 7 11201 Renner Blv
Lenexa, KS 66219
Generator's Phone:

Generator's Site Address (if different than mailing address)
500 Chestnut St
Atlantic, IA 50022

6. Transporter 1 Company Name [redacted] U.S. EPA ID Number ARR000026518 ~~MAD039322250~~

7. Transporter 2 Company Name U.S. EPA ID Number

8. Designated Facility Name and Site Address
Clean Harbors Lone Mountain LLC
40355 S County Road 236
Waynoka, OK 73860
Facility's Phone: (580) 697-3500

U.S. EPA ID Number OKD065438376

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3077, WASTE ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S., (PERCHLOROETHYLENE, ASBESTOS), 9, PG III (ASBESTOS)	1	CM	15	Y	D039
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.CH1112911 ERG#171 CHRT 24122

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Susan Fisher Signature: [signature] Month: 11 Day: 17 Year: 16

INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name [redacted] Signature [redacted] Month: 11 Day: 17 Year: 16

Transporter 2 Printed/Typed Name Signature Month: Day: Year:

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month: Day: Year:

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			16-6503

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

[redacted] Signature [redacted] Month: 11 Day: 18 Year: 16

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

[redacted] has the appropriate permits for and will accept the waste the generator is shipping.

Generator ~~HOPA~~ Former Drycleaner

LM # CH131 3911

Manifest # 009870357 FLE

Order # 1603762558

Container # _____

Hauler UG 90

[redacted]
Waynoka, Oklahoma
INBOUND
12:34 11 18 16
VEHICLE 6503 48000 lb

OUTBOUND
13:54 11 18 16
TARE WEIGHT 44760 lb

NET WEIGHT 3240 lb

GROSS

TARE

NET 1.62

DIGITAL WEIGHT INDICATOR & PRINTER

Load No. 6503

[redacted]

Certificate of Disposal / Treatment - Storage and Transfer

Run Date: 12/7/2016

Manifested To Site: [redacted]

EPA ID/Prov ID: OKD065438376

Generator ID	Manifest No.	Generation Date	Received Date
FO21695	009870357FLE	11/17/2016	11/18/2016

The above described waste, received at the [redacted] facility listed above pursuant to the manifest(s) listed above, has/will be treated and/or disposed of by [redacted] or another licensed facility approved by [redacted] in accordance with applicable federal, state and provincial laws and regulations. Any waste received by [redacted] and subsequently shipped to another licensed facility has been or shall be identified as being generated by [redacted] in accordance with 40CFR 264.71(c).

For waste imported/exported to/from Canada the waste has/will be disposed or recycled according to the Canadian export and import of hazardous waste or hazardous recyclable material regulation as published in the Canadian Gazette Part II, vol 139, No 11, SOR/2005-149 May 17, 2005

Under civil and criminal penalties of law for the making of submission of false or fraudulent statements or representations (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate, and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate, and complete.

Signed: [redacted] **Date:** 12/7/2016

Title: Director Facility Applications

ATTACHMENT B

PCE Chestnut Street – RV-2
500 Chestnut Street
Atlantic, Iowa – Site ID B7A4

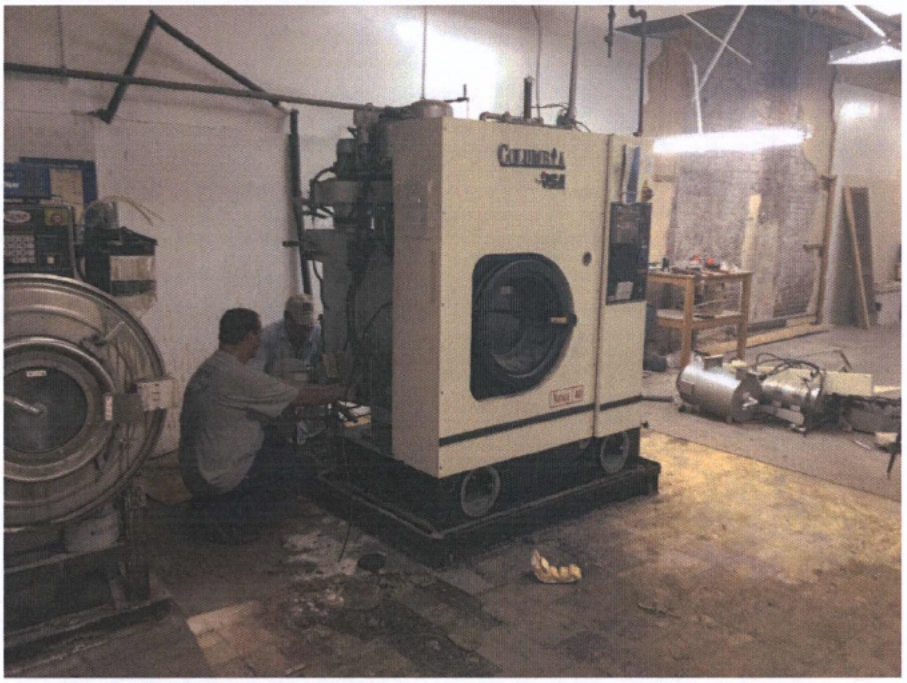


Photo No.: 1	**Date:** September 8, 2016	**Time:** PM
Photographer: Jeff Pritchard		**Direction:** South
Description: Dry cleaning machine with PCE that was removed for disposal during removal activities.		

Photo No.: 2	**Date:** September 8, 2016	**Time:** PM
Photographer: Jeff Pritchard		**Direction:** East
Description: View of first floor during carpet removal activities.		

Photo No.: 3	**Date:** September 8, 2016	**Time:** PM
Photographer: Jeff Pritchard		**Direction:** East
Description: View of first floor during carpet removal activities.		

Photo No.: 4	**Date:** September 8, 2016	**Time:** PM
Photographer: Jeff Pritchard		**Direction:** East
Description: View of first floor following carpet removal.		

Photo No.: 5	**Date:** February 15, 2017	**Time:** PM
Photographer: Jeff Pritchard		**Direction:** East
Description: View of first floor following removal and disposal of wood flooring materials.		

Photo No.: 6	**Date:** February 15, 2017	**Time:** PM
Photographer: Jeff Pritchard		**Direction:** East
Description: View of first floor following removal and disposal of wood flooring materials.		

ATTACHMENT C

[redacted]

[redacted]

September 15, 2016

[redacted]

RE: Project: PCE CHESTNUT
[redacted]

Dear[redacted]
Enclosed are the analytical results for sample(s) received by the laboratory on September 09, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

[redacted]

Project Manager

Enclosures

[redacted]

[redacted]

CERTIFICATIONS

Project: PCE CHESTNUT

[redacted]

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587

[redacted]

[redacted]

SAMPLE SUMMARY

Project: PCE CHESTNUT

[redacted]

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60227435001	500 CHESTNUT-CARPET-1	Solid	09/08/16 10:00	09/09/16 17:00
60227435002	500 CHESTNUT-CARPET-2	Solid	09/08/16 10:00	09/09/16 17:00

[redacted]

[redacted]

SAMPLE ANALYTE COUNT

Project: PCE CHESTNUT [redacted]

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60227435001	500 CHESTNUT-CARPET-1	EPA 8260	JKL	4	PASI-K
60227435002	500 CHESTNUT-CARPET-2	EPA 8260	JKL	4	PASI-K

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE CHESTNUT [redacted]

Sample: 500 CHESTNUT-CARPET-1 **Lab ID: 60227435001** Collected: 09/08/16 10:00 Received: 09/09/16 17:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA	Analytical Method: EPA 8260								
Tetrachloroethene	**184000**	ug/kg	4310		50		09/12/16 13:40	127-18-4	
Surrogates									
Toluene-d8 (S)	98	%	80-120		50		09/12/16 13:40	2037-26-5	
4-Bromofluorobenzene (S)	97	%	80-120		50		09/12/16 13:40	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	83-120		50		09/12/16 13:40	17060-07-0	

Sample: 500 CHESTNUT-CARPET-2 **Lab ID: 60227435002** Collected: 09/08/16 10:00 Received: 09/09/16 17:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 09/13/16 00:00								
Tetrachloroethene	**211**	ug/L	50.0	700	1		09/14/16 22:27	127-18-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%	80-120		1		09/14/16 22:27	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		09/14/16 22:27	2037-26-5	
4-Bromofluorobenzene (S)	94	%	80-120		1		09/14/16 22:27	460-00-4	

[redacted]

[redacted]

QUALITY CONTROL DATA

Project: PCE CHESTNUT
[redacted]

QC Batch: 446528
QC Batch Method: EPA 8260
Associated Lab Samples: 60227435002

Analysis Method: EPA 8260
Analysis Description: 8260 MSV TCLP

METHOD BLANK: 1825633
Associated Lab Samples: 60227435002

Matrix: Water

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	ug/L	ND	50.0	09/14/16 21:41	
1,2-Dichloroethane-d4 (S)	%	100	80-120	09/14/16 21:41	
4-Bromofluorobenzene (S)	%	95	80-120	09/14/16 21:41	
Toluene-d8 (S)	%	99	80-120	09/14/16 21:41	

LABORATORY CONTROL SAMPLE: 1825634

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/L	1000	914	91	73-124	
1,2-Dichloroethane-d4 (S)	%			97	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			102	80-120	

MATRIX SPIKE SAMPLE: 1825635

Parameter	Units	60227394001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/L	ND	1000	843	84	59-129	
1,2-Dichloroethane-d4 (S)	%				97	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				102	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

[redacted]

[redacted]

QUALITY CONTROL DATA

Project: PCE CHESTNUT
[redacted]

QC Batch: 446130
QC Batch Method: EPA 8260
Associated Lab Samples: 60227435001

Analysis Method: EPA 8260
Analysis Description: 8260 MSV 5035A Volatile Organics

METHOD BLANK: 1824067
Associated Lab Samples: 60227435001

Matrix: Solid

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	ug/kg	ND	5.0	09/12/16 11:23	
1,2-Dichloroethane-d4 (S)	%	99	83-120	09/12/16 11:23	
4-Bromofluorobenzene (S)	%	97	80-120	09/12/16 11:23	
Toluene-d8 (S)	%	99	80-120	09/12/16 11:23	

LABORATORY CONTROL SAMPLE: 1824068

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/kg	100	106	106	74-125	
1,2-Dichloroethane-d4 (S)	%			97	83-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			101	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

[redacted]

[redacted]

QUALIFIERS

Project: PCE CHESTNUT [redacted]

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

[redacted] is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

[redacted]

REPORT OF LABORATORY ANALYSIS

[redacted]

[redacted]

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PCE CHESTNUT
[redacted]

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60227435002	**500 CHESTNUT-CARPET-2**	EPA 8260	446528		
60227435001	**500 CHESTNUT-CARPET-1**	EPA 8260	446130		

[redacted]

Sample Condition Upon Receipt

WO#: 60227435

60227435

Client Name: Tetra Tech

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☑ Xroads ☐ Client ☐ Other ☐

Tracking #: _____ [redacted] Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: (CF +1.1) T-266 / (CF -0.1) T-239 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 2.5 **Corr. Factor** (CF +1.1) (CF -0.1) **Corrected** 3.6

Date and initials of person examining contents: BB 9/10/16

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☑Yes ☐No ☐N/A	24 Hr.
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☐Yes ☑No ☐N/A	one Ziploc (carpet-2) had
[redacted] containers used:	☐Yes ☑No ☐N/A	a lot of water in it @ time
Containers intact:	☑Yes ☐No ☐N/A	of receipt
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: SL	☐Yes ☐No ☐N/A	
Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☐Yes ☐No ☑N/A	
Cyanide water sample checks: ☐ N/A Lead acetate strip turns dark? (Record only) Potassium Iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐Yes ☐No	
Trip Blank present:	☐Yes ☑No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: 9/12/16

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

[redacted]

Page: [redacted]

Section A Required Client Information:
Company: TETRA TECH
Address: 415 OAK ST.
KANSAS [redacted]
[redacted]
Phone: (913) 412-1794
Requested Due Date/TAT: 24 HR

Section B Required Project Information:
[redacted]
Purchase Order No.:
Project Name: PCE CHESTNUT
Project Number: 103X4025516.0126

Section C Invoice Information:
[redacted]
Company Name: TETRA TECH
Address: [redacted]
[redacted]

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER
Site Location STATE: ID

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information — SAMPLE ID (A-Z, 0-9 / ,) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test ↓ Y/N	PCE	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	500 CHESTNUT-CARPET-1	DT	G			9/8/16	1400		1	1									X	X		60227435 [redacted] 001
2	500 CHESTNUT-CARPET-2	DT	G			9/8/16	1000		1	1									X	X		[redacted] 002
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

24 Hour

ADDITIONAL COMMENTS	[redacted]	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
WILD CARPET-2 SAMPLE FOR TCLP ANALYSIS PENDING RESULTS OF CARPET-1 SAMPLE		9/9/16	1000	[redacted]	9-9	10:05				
					9/9/16	1700	3.6	Y	Y	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAM: [redacted]
SIGNATURE of SAM: [redacted]
DATE Signed (MM/DD/YY): 9/9/16

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting [redacted] NET 30 day payment terms and agreeing to late charges of 1.5% p[redacted]

F-ALL-Q-020rev.07, 15-May-2007

[redacted]

[redacted]

September 16, 2016

[redacted]
[redacted] MO 64106

RE: Project: PCE CHESTNUT RV002
[redacted]

Dear [redacted]:
Enclosed are the analytical results for sample(s) received by the laboratory on September 15, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

[redacted]
Project Manager

Enclosures

[redacted]

[redacted]

CERTIFICATIONS

Project: PCE CHESTNUT RV002

[redacted]

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
525 N 8th Street, Salina, KS 67401
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Alabama Certification #40770
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida/NELAP Certification #: E87605
Guam Certification #:14-008r
Georgia Certification #: 959
Georgia EPD #: Pace
Idaho Certification #: MN00064
Hawaii Certification #MN00064
Illinois Certification #: 200011
Indiana Certification#C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky Dept of Envi. Protection - DW #90062
Kentucky Dept of Envi. Protection - WW #:90062
Louisiana DEQ Certification #: 3086
Louisiana DHH #: LA140001
Maine Certification #: 2013011
Maryland Certification #: 322
Michigan DEPH Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Carolina State Public Health #: 27700
North Dakota Certification #: R-036
Ohio EPA #: 4150
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Saipan (CNMI) #:MP0003
South Carolina #:74003001
Texas Certification #: T104704192
Tennessee Certification #: 02818
Utah Certification #: MN000642013-4
Virginia DGS Certification #: 251
Virginia/VELAP Certification #: Pace
Washington Certification #: C486
West Virginia Certification #: 382
West Virginia DHHR #:9952C
Wisconsin Certification #: 999407970

[redacted]

[redacted]

SAMPLE SUMMARY

Project: PCE CHESTNUT RV002

[redacted]

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60227759001	SOOCHESTNUT IA	Air	09/13/16 16:30	09/15/16 09:30

[redacted]

[redacted]

SAMPLE ANALYTE COUNT

Project: PCE CHESTNUT RV002 [redacted]

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60227759001	SOOCHESTNUT IA	TO-15	NCK	2	[redacted]

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE CHESTNUT RV002

[redacted]

Sample: SOOCHESTNUT IA **Lab ID: 60227759001** Collected: 09/13/16 16:30 Received: 09/15/16 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Tetrachloroethene	**286**	ug/m3	2.8	2.01		09/15/16 15:26	127-18-4	
Trichloroethene	ND	ug/m3	1.1	2.01		09/15/16 15:26	79-01-6	

REPORT OF LABORATORY ANALYSIS

[redacted]

[redacted]

QUALITY CONTROL DATA

Project: PCE CHESTNUT RV002

[redacted]

QC Batch: 435962
Analysis Method: TO-15
QC Batch Method: TO-15
Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 60227759001

METHOD BLANK: 2369263
Matrix: Air
Associated Lab Samples: 60227759001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	ug/m3	ND	1.4	09/15/16 10:53	
Trichloroethene	ug/m3	ND	0.55	09/15/16 10:53	

LABORATORY CONTROL SAMPLE: 2369264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/m3	69	74.6	108	60-142	
Trichloroethene	ug/m3	54.6	60.4	111	60-144	

SAMPLE DUPLICATE: 2369337

Parameter	Units	10362023001 Result	Dup Result	RPD	Max RPD	Qualifiers
Tetrachloroethene	ug/m3	7.6	7.7	1	25	
Trichloroethene	ug/m3	ND	ND		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

[redacted]

[redacted]

QUALIFIERS

Project: PCE CHESTNUT RV002

[redacted]

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

[redacted]

[redacted]

[redacted]

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PCE CHESTNUT RV002 [redacted]

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60227759001	**SOOCHESTNUT IA**	TO-15	435962		

[redacted]

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

28836

Page: 1 of 1

[redacted]

Program

UST | Superfund | Emissions | Clean Air Act

Voluntary Clean Up | Dry Clean | RCRA | Other

Location of Sampling by State: IOWA

Reporting Units: ug/m³ X | mg/m³ | PPBV | PPMV | Other

Report Level: II. | III. | IV. | Other

Method:

ITEM #	AIR SAMPLE ID (Sample IDs MUST BE UNIQUE)	MEDIA CODE	PID Reading (Client or	COLLECTED: COMPOSITE START END/GRAB DATE	COLLECTED: COMPOSITE START END/GRAB TIME	COLLECTED: COMPOSITE END DATE	COLLECTED: COMPOSITE END TIME	Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	PM10	3C: Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-13 (PAH)	TO-14	TO-15	TO15 Short List*	Lab ID
1	500 Chestnut IA	LC		9/13/16	1000	9/14/16	630	-30	-10	2377	FC 280							X			
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

MEDIA / CODE: Tedlar Bag TB; 1 Liter Summa Can 1LC; 6 Liter Summa Can 6LC; Low Volume Puff LVP; High Volume Puff HVP; Other PM10

Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
			[redacted]	9/15/16	0430

SAMPLE CONDITIONS

Temp In °C	Received on Ice	Custody Sealed Cooler	Samples Intact
AMB	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: | DATE Signed (MM / DD / YY)

ORIGINAL

[redacted] Air Technical Phone: 612.607.6386

[redacted]	Document Name: Air Sample Condition Upon Receipt	Document Revised: 26APR2016 Page 1 of 1
	Document No.: F-MN-A-106-rev.11	Issuing Authority: [redacted] Quality Office

Air Sample Condition Upon Receipt

Client Name: Pacels

Project #:

Courier: ☐Fed Ex ☒UPS ☐Speedee ☐Client ☐Commercial ☐Pace ☐Other:

Tracking Number: 1Z 871 249 03 9351 4607 1Z 871 249 01 9111 4412

Custody Seal on Cooler/Box Present? ☐Yes ☒No **Seals Intact?** ☐Yes ☒No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐Bubble Wrap ☐Bubble Bags ☒Foam ☐None ☐Tin Can ☐Other: **Temp Blank rec:** ☐Yes ☒No

Temp. (TO17 and TO13 samples only) (°C): X **Corrected Temp (°C):** X **Thermom. Used:** ☐B88A912167504 ☐B88A0143310098 ☐151401163 ☐151401164

Temp should be above freezing to 6°C **Correction Factor:** X **Date & Initials of Person Examining Contents:** 9/15/16

Type of Ice Received ☐Blue ☐Wet ☒None

				Comments:
Chain of Custody Present?	☒Yes	☐No	☐N/A	1.
Chain of Custody Filled Out?	☒Yes	☐No	☐N/A	2.
Chain of Custody Relinquished?	☐Yes	☒No	☐N/A	3.
Sampler Name and/or Signature on COC?	☐Yes	☒No	☐N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No	☐N/A	6.
Rush Turn Around Time Requested?	☒Yes	☐No	☐N/A	7. 24hour
Sufficient Volume?	☒Yes	☐No	☐N/A	8.
Correct Containers Used?	☒Yes	☐No	☐N/A	9.
-Pace Containers Used?	☒Yes	☐No	☐N/A	
Containers Intact?	☒Yes	☐No	☐N/A	10.
Media: Air Can Airbag Filter TDT Passive				11.
Sample Labels Match COC?	☐Yes	☒No	☐N/A	12. No ID on can tag

Samples Received:

Canisters			Canisters		
Sample Number	Can ID	Flow Controller ID	Sample Number	Can ID	Flow Controller ID
Unused	2124	0320			

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: **Date:**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

[redacted]

[redacted]

October 05, 2016

[redacted]
415 Oak
Kansas City, MO 64106

RE: Project: PCE CHESTNUT
[redacted]

Dear [redacted]
Enclosed are the analytical results for sample(s) received by the laboratory on September 30, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

[redacted]
Project Manager

Enclosures

cc: [redacted]

[redacted]

[redacted]

CERTIFICATIONS

Project: PCE CHESTNUT

[redacted]

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587

REPORT OF LABORATORY ANALYSIS

[redacted]

[redacted]

SAMPLE SUMMARY

Project: PCE CHESTNUT

[redacted]

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60228969001	FLR 2	Solid	09/28/16 15:32	09/30/16 13:55
60228969002	FLR 1	Solid	09/28/16 15:30	09/30/16 13:55
60228969003	FLR 3	Solid	09/28/16 15:40	09/30/16 13:55
60228969004	FLR 4	Solid	09/28/16 15:43	09/30/16 13:55
60228969005	FLR 5	Solid	09/28/16 15:45	09/30/16 13:55
60228969006	FLR 6	Solid	09/28/16 15:47	09/30/16 13:55
60228969007	FLR 7	Solid	09/28/16 15:49	09/30/16 13:55
60228969008	FLR 8	Solid	09/28/16 15:51	09/30/16 13:55
60228969009	FLR 9	Solid	09/28/16 15:55	09/30/16 13:55
60228969010	WALL 1	Solid	09/28/16 15:57	09/30/16 13:55
60228969011	WALL 2	Solid	09/28/16 16:00	09/30/16 13:55
60228969012	WALL 3	Solid	09/28/16 16:01	09/30/16 13:55

[redacted]

[redacted]

SAMPLE ANALYTE COUNT

Project: PCE CHESTNUT [redacted]

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60228969001	FLR 2	EPA 8260	JKL	4
		ASTM D2974	DWC	1
60228969002	FLR 1	EPA 8260	JKL	4
		ASTM D2974	DWC	1
60228969003	FLR 3	EPA 8260	JKL	4
		ASTM D2974	DWC	1
60228969004	FLR 4	EPA 8260	JKL	4
		ASTM D2974	DWC	1
60228969005	FLR 5	EPA 8260	JKL	4
		ASTM D2974	DWC	1
60228969006	FLR 6	EPA 8260	JKL	4
		ASTM D2974	DWC	1
60228969007	FLR 7	EPA 8260	JKL	4
		ASTM D2974	DWC	1
60228969008	FLR 8	EPA 8260	JKL	4
		ASTM D2974	DWC	1
60228969009	FLR 9	EPA 8260	JKL	4
		ASTM D2974	DWC	1
60228969010	WALL 1	EPA 8260	JKL	4
		ASTM D2974	DWC	1
60228969011	WALL 2	EPA 8260	JKL	4
		ASTM D2974	DWC	1
60228969012	WALL 3	EPA 8260	JKL	4
		ASTM D2974	DWC	1

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE CHESTNUT

[redacted]

Sample: FLR 2 **Lab ID: 60228969001** Collected: 09/28/16 15:32 Received: 09/30/16 13:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA	Analytical Method: EPA 8260							
Tetrachloroethene	ND	ug/kg	1160	50		10/03/16 22:53	127-18-4	
Surrogates								
Toluene-d8 (S)	91	%	80-120	50		10/03/16 22:53	2037-26-5	D3
4-Bromofluorobenzene (S)	97	%	80-120	50		10/03/16 22:53	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	83-120	50		10/03/16 22:53	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**21.0**	%	0.50	1		10/04/16 00:00		

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE CHESTNUT [redacted]

Sample: FLR 1 **Lab ID: 60228969002** Collected: 09/28/16 15:30 Received: 09/30/16 13:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA	Analytical Method: EPA 8260							
Tetrachloroethene	**441000**	ug/kg	26800	5000		10/04/16 19:20	127-18-4	
Surrogates								
Toluene-d8 (S)	93	%	80-120	5000		10/04/16 19:20	2037-26-5	
4-Bromofluorobenzene (S)	100	%	80-120	5000		10/04/16 19:20	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	83-120	5000		10/04/16 19:20	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**5.1**	%	0.50	1		10/04/16 00:00		

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE CHESTNUT

[redacted]

Sample: FLR 3 **Lab ID: 60228969003** Collected: 09/28/16 15:40 Received: 09/30/16 13:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA	Analytical Method: EPA 8260							
Tetrachloroethene	**4330**	ug/kg	1400	50		10/04/16 19:35	127-18-4	
Surrogates								
Toluene-d8 (S)	91	%	80-120	50		10/04/16 19:35	2037-26-5	
4-Bromofluorobenzene (S)	101	%	80-120	50		10/04/16 19:35	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	83-120	50		10/04/16 19:35	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**7.9**	%	0.50	1		10/04/16 00:00		

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE CHESTNUT [redacted]

Sample: FLR 4 **Lab ID: 60228969004** Collected: 09/28/16 15:43 Received: 09/30/16 13:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA	Analytical Method: EPA 8260							
Tetrachloroethene	**3460**	ug/kg	1240	50		10/04/16 19:50	127-18-4	
Surrogates								
Toluene-d8 (S)	91	%	80-120	50		10/04/16 19:50	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-120	50		10/04/16 19:50	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	83-120	50		10/04/16 19:50	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**7.4**	%	0.50	1		10/04/16 00:00		

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE CHESTNUT

[redacted]

Sample: FLR 5 **Lab ID: 60228969005** Collected: 09/28/16 15:45 Received: 09/30/16 13:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA	Analytical Method: EPA 8260							
Tetrachloroethene	**4810**	ug/kg	1330	50		10/04/16 20:06	127-18-4	
Surrogates								
Toluene-d8 (S)	92	%	80-120	50		10/04/16 20:06	2037-26-5	
4-Bromofluorobenzene (S)	102	%	80-120	50		10/04/16 20:06	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	83-120	50		10/04/16 20:06	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**9.9**	%	0.50	1		10/04/16 00:00		

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE CHESTNUT [redacted]

Sample: FLR 6 **Lab ID: 60228969006** Collected: 09/28/16 15:47 Received: 09/30/16 13:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA	Analytical Method: EPA 8260							
Tetrachloroethene	**2460**	ug/kg	255	50		10/04/16 00:40	127-18-4	
Surrogates								
Toluene-d8 (S)	89	%	80-120	50		10/04/16 00:40	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-120	50		10/04/16 00:40	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	83-120	50		10/04/16 00:40	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**2.2**	%	0.50	1		10/04/16 00:00		

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE CHESTNUT

[redacted]

Sample: FLR 7 **Lab ID: 60228969007** Collected: 09/28/16 15:49 Received: 09/30/16 13:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA	Analytical Method: EPA 8260							
Tetrachloroethene	**1380**	ug/kg	1230	50		10/04/16 00:55	127-18-4	
Surrogates								
Toluene-d8 (S)	91	%	80-120	50		10/04/16 00:55	2037-26-5	
4-Bromofluorobenzene (S)	101	%	80-120	50		10/04/16 00:55	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	83-120	50		10/04/16 00:55	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**5.9**	%	0.50	1		10/04/16 00:00		

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE CHESTNUT

[redacted]

Sample: FLR 8 **Lab ID: 60228969008** Collected: 09/28/16 15:51 Received: 09/30/16 13:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA	Analytical Method: EPA 8260							
Tetrachloroethene	ND	ug/kg	1480	50		10/04/16 01:11	127-18-4	
Surrogates								
Toluene-d8 (S)	90	%	80-120	50		10/04/16 01:11	2037-26-5	D3
4-Bromofluorobenzene (S)	102	%	80-120	50		10/04/16 01:11	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	83-120	50		10/04/16 01:11	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**9.3**	%	0.50	1		10/04/16 00:00		

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE CHESTNUT

[redacted]

Sample: FLR 9 **Lab ID: 60228969009** Collected: 09/28/16 15:55 Received: 09/30/16 13:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA	Analytical Method: EPA 8260							
Tetrachloroethene	ND	ug/kg	1450	50		10/04/16 01:26	127-18-4	
Surrogates								
Toluene-d8 (S)	89	%	80-120	50		10/04/16 01:26	2037-26-5	D3
4-Bromofluorobenzene (S)	101	%	80-120	50		10/04/16 01:26	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	83-120	50		10/04/16 01:26	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**9.2**	%	0.50	1		10/04/16 00:00		

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE CHESTNUT [redacted]

Sample: WALL 1 **Lab ID: 60228969010** Collected: 09/28/16 15:57 Received: 09/30/16 13:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA	Analytical Method: EPA 8260							
Tetrachloroethene	ND	ug/kg	1380	50		10/04/16 01:41	127-18-4	
Surrogates								
Toluene-d8 (S)	93	%	80-120	50		10/04/16 01:41	2037-26-5	D3
4-Bromofluorobenzene (S)	104	%	80-120	50		10/04/16 01:41	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	83-120	50		10/04/16 01:41	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**16.1**	%	0.50	1		10/04/16 00:00		

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE CHESTNUT

[redacted]

Sample: WALL 2 **Lab ID: 60228969011** Collected: 09/28/16 16:00 Received: 09/30/16 13:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA	Analytical Method: EPA 8260							
Tetrachloroethene	ND	ug/kg	1390	50		10/04/16 01:57	127-18-4	
Surrogates								
Toluene-d8 (S)	93	%	80-120	50		10/04/16 01:57	2037-26-5	D3
4-Bromofluorobenzene (S)	101	%	80-120	50		10/04/16 01:57	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	83-120	50		10/04/16 01:57	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**16.8**	%	0.50	1		10/04/16 00:00		

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE CHESTNUT [redacted]

Sample: WALL 3 **Lab ID: 60228969012** Collected: 09/28/16 16:01 Received: 09/30/16 13:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA	Analytical Method: EPA 8260							
Tetrachloroethene	ND	ug/kg	1490	50		10/04/16 02:12	127-18-4	
Surrogates								
Toluene-d8 (S)	**91**	%	80-120	50		10/04/16 02:12	2037-26-5	D3
4-Bromofluorobenzene (S)	100	%	80-120	50		10/04/16 02:12	460-00-4	
1,2-Dichloroethane-d4 (S)	**94**	%	83-120	50		10/04/16 02:12	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**17.0**	%	0.50	1		10/04/16 00:00		

[redacted]

[redacted]

QUALITY CONTROL DATA

Project: PCE CHESTNUT
[redacted]

QC Batch: 448942 Analysis Method: EPA 8260

QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics

Associated Lab Samples: 60228969001, 60228969006, 60228969007, 60228969008, 60228969009, 60228969010, 60228969011, 60228969012

METHOD BLANK: 1837254 Matrix: Solid

Associated Lab Samples: 60228969001, 60228969006, 60228969007, 60228969008, 60228969009, 60228969010, 60228969011, 60228969012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	ug/kg	ND	5.0	10/03/16 22:38	
1,2-Dichloroethane-d4 (S)	%	99	83-120	10/03/16 22:38	
4-Bromofluorobenzene (S)	%	99	80-120	10/03/16 22:38	
Toluene-d8 (S)	%	92	80-120	10/03/16 22:38	

LABORATORY CONTROL SAMPLE: 1837255

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/kg	100	84.9	85	74-125	
1,2-Dichloroethane-d4 (S)	%			98	83-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1837256 1837257

Parameter	Units	60228969001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Tetrachloroethene	ug/kg	ND	23300	23300	23900	27100	102	115	10-140	13	63	
1,2-Dichloroethane-d4 (S)	%						93	95	83-120			
4-Bromofluorobenzene (S)	%						99	102	80-120			
Toluene-d8 (S)	%						91	92	80-120			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

[redacted]

[redacted]

QUALITY CONTROL DATA

Project: PCE CHESTNUT [redacted]

QC Batch: 449096 Analysis Method: EPA 8260

QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics

Associated Lab Samples: 60228969002, 60228969003, 60228969004, 60228969005

METHOD BLANK: 1837648 Matrix: Solid

Associated Lab Samples: 60228969002, 60228969003, 60228969004, 60228969005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	ug/kg	ND	5.0	10/04/16 19:04	
1,2-Dichloroethane-d4 (S)	%	102	83-120	10/04/16 19:04	
4-Bromofluorobenzene (S)	%	100	80-120	10/04/16 19:04	
Toluene-d8 (S)	%	93	80-120	10/04/16 19:04	

LABORATORY CONTROL SAMPLE: 1837649

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/kg	100	89.9	90	74-125	
1,2-Dichloroethane-d4 (S)	%			99	83-120	
4-Bromofluorobenzene (S)	%			105	80-120	
Toluene-d8 (S)	%			94	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

[redacted]

[redacted]

QUALITY CONTROL DATA

Project: PCE CHESTNUT

[redacted]

QC Batch: 449053 Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974 Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 60228969001, 60228969002, 60228969003, 60228969004, 60228969005, 60228969006, 60228969007, 60228969008, 60228969009, 60228969010, 60228969011, 60228969012

METHOD BLANK: 1837543 Matrix: Solid

Associated Lab Samples: 60228969001, 60228969002, 60228969003, 60228969004, 60228969005, 60228969006, 60228969007, 60228969008, 60228969009, 60228969010, 60228969011, 60228969012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	10/04/16 00:00	

SAMPLE DUPLICATE: 1837544

Parameter	Units	40139057001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	4.5	4.3	6	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

[redacted]

[redacted]

QUALIFIERS

Project: PCE CHESTNUT [redacted]

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

[redacted]

[redacted]

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PCE CHESTNUT [redacted]

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60228969001	FLR 2	EPA 8260	448942		
60228969002	FLR 1	EPA 8260	449096		
60228969003	FLR 3	EPA 8260	449096		
60228969004	FLR 4	EPA 8260	449096		
60228969005	FLR 5	EPA 8260	449096		
60228969006	FLR 6	EPA 8260	448942		
60228969007	FLR 7	EPA 8260	448942		
60228969008	FLR 8	EPA 8260	448942		
60228969009	FLR 9	EPA 8260	448942		
60228969010	WALL 1	EPA 8260	448942		
60228969011	WALL 2	EPA 8260	448942		
60228969012	WALL 3	EPA 8260	448942		
60228969001	FLR 2	ASTM D2974	449053		
60228969002	FLR 1	ASTM D2974	449053		
60228969003	FLR 3	ASTM D2974	449053		
60228969004	FLR 4	ASTM D2974	449053		
60228969005	FLR 5	ASTM D2974	449053		
60228969006	FLR 6	ASTM D2974	449053		
60228969007	FLR 7	ASTM D2974	449053		
60228969008	FLR 8	ASTM D2974	449053		
60228969009	FLR 9	ASTM D2974	449053		
60228969010	WALL 1	ASTM D2974	449053		
60228969011	WALL 2	ASTM D2974	449053		
60228969012	WALL 3	ASTM D2974	449053		

[redacted]

Sample Condition Upon Receipt

WO#: 60228969

60228969

Client Name: Tetra Tech EM I

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☑ Other ☐

Tracking #: [redacted] Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☑ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: CF +0.1 / CF -0.1 T-266 / T-239 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): As-read 9.7 **Corr. Factor** CF +0.1 / CF -0.1 **Corrected** 10.8

Date and initials of person examining contents: 9/30

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☐Yes ☑No ☐N/A	- temp >6.0°c
Samples arrived within holding time:	☑Yes ☐No ☐N/A	- samples separated from
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	ice by several layers of
Rush Turn Around Time requested:	☑Yes ☐No ☐N/A	3 day bubble wrap / bags
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	Sample # / collection time
[redacted] containers used:	☑Yes ☐No ☐N/A	1 1532
Containers intact:	☑Yes ☐No ☐N/A	2 1530, 3 1540
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	4 1543, 5 1545
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	6 1547, 7 1549
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	8 1551, 9 1555
Samples contain multiple phases? Matrix: Sl	☐Yes ☑No ☐N/A	10 1557, 11 1600
Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☐Yes ☐No ☑N/A	12 1601
Cyanide water sample checks: ☑N/A		
Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☑No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client [redacted] Time: 10/3/16

Comments/ Resoluti[redacted] reading temp blank - proceed

Comments

Project Manager Review: [redacted] Date: 9.30.16

[redacted]

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:

[redacted]

Section B
Required Project Information:

[redacted]

Section C
Invoice Information:

Attention:
Company Name:
Address:
[redacted] Quote Reference:
[redacted] Project Manager:
[redacted] Profile #: 970.1

Page: of

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location
STATE: _____

Section D
Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Analysis Test: RCP's PCE	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	FLR 2	SL/OT	G	9/29/16					1	X									X		WGFU 01
2	FLR 1	SL/OT	G	"					1	X									X		" 02
3	FLR 3	SL/OT	G	"					1	X									X		" 03
4	FLR 4	SL	G	"					1	X									X		" 04
5	FLR 5	SL	G	"					1	X									X		" 05
6	FLR 6	SL	G	"					1	X									X		" 06
7	FLR 7	SL	G	"					1	X									X		" 07
8	FLR 8	SL	G	"					1	X									X		" 08
9	FLR 9	SL	G	"					1	X									X		" 09
10	Wall 1	SL	G	"					1	X									X		" 010
11	Wall 2	SL	G	"					1	X									X		" 011
12	Wall 3	SL	G	"					1	X									X		" 012

6022569169

[redacted] Project No./ Lab I.D.

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
				[redacted]	9/30	1355	0.8	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY):

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

[redacted]

[redacted]

December 06, 2016

[redacted]

RE: Project: PCE Chestnut
[redacted]

Dear [redacted]:
Enclosed are the analytical results for sample(s) received by the laboratory on November 22, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

[redacted]
Project Manager

Enclosures

[redacted]

[redacted]

CERTIFICATIONS

Project: PCE Chestnut
[redacted] [redacted]

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
525 N 8th Street, Salina, KS 67401
Alaska Certification UST-107
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Alabama Certification #40770
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida/NELAP Certification #: E87605
Guam Certification #:14-008r
Georgia Certification #: 959
Georgia EPD #: Pace
Idaho Certification #: MN00064
Hawaii Certification #MN00064
Illinois Certification #: 200011
Indiana Certification#C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky Dept of Envi. Protection - DW #90062
Kentucky Dept of Envi. Protection - WW #:90062
Louisiana DEQ Certification #: 3086
Louisiana DHH #: LA140001
Maine Certification #: 2013011
Maryland Certification #: 322
Michigan DEPH Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Carolina State Public Health #: 27700
North Dakota Certification #: R-036
Ohio EPA #: 4150
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Saipan (CNMI) #:MP0003
South Carolina #:74003001
Texas Certification #: T104704192
Tennessee Certification #: 02818
Utah Certification #: MN000642013-4
Virginia DGS Certification #: 251
Virginia/VELAP Certification #: Pace
Washington Certification #: C486
West Virginia Certification #: 382
West Virginia DHHR #:9952C
Wisconsin Certification #: 999407970

[redacted]

[redacted]

SAMPLE SUMMARY

Project: PCE Chestnut
[redacted]

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60232865001	500 Chestnut	Air	11/17/16 09:30	11/22/16 09:00

[redacted]

[redacted]

SAMPLE ANALYTE COUNT

Project: PCE Chestnut
[redacted]

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60232865001	500 Chestnut	TO-15	NCK	4	[redacted]

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE Chestnut [redacted]

Sample: 500 Chestnut **Lab ID: 60232865001** Collected: 11/17/16 09:30 Received: 11/22/16 09:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
cis-1,2-Dichloroethene	ND	ug/m3	1.3	1.61		12/01/16 14:52	156-59-2	
Trichloroethene	ND	ug/m3	0.89	1.61		12/01/16 14:52	79-01-6	
Tetrachloroethene	**5.3**	ug/m3	1.1	1.61		12/01/16 14:52	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	1.3	1.61		12/01/16 14:52	156-60-5	

[redacted]

[redacted]

QUALITY CONTROL DATA

Project: PCE Chestnut
[redacted]

QC Batch: 449881
QC Batch Method: TO-15
Associated Lab Samples: 60232865001

Analysis Method: TO-15
Analysis Description: TO15 MSV AIR Low Level

METHOD BLANK: 2463864
Associated Lab Samples: 60232865001

Matrix: Air

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/m3	ND	0.81	12/01/16 10:48	
Tetrachloroethene	ug/m3	ND	0.69	12/01/16 10:48	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	12/01/16 10:48	
Trichloroethene	ug/m3	ND	0.55	12/01/16 10:48	

LABORATORY CONTROL SAMPLE: 2463865

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/m3	40.3	36.5	91	65-139	
Tetrachloroethene	ug/m3	68.9	66.0	96	60-142	
trans-1,2-Dichloroethene	ug/m3	40.3	41.7	104	67-137	
Trichloroethene	ug/m3	54.6	47.2	86	60-144	

SAMPLE DUPLICATE: 2463878

Parameter	Units	60232865001 Result	Dup Result	RPD	Max RPD	Qualifiers
cis-1,2-Dichloroethene	ug/m3	ND	ND		25	
Tetrachloroethene	ug/m3	5.3	5.6	6	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	ND	ND		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

[redacted]

[redacted]

QUALIFIERS

Project: PCE Chestnut [redacted]

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

[redacted]

[redacted]

[redacted]

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PCE Chestnut
[redacted]

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60232865001	500 Chestnut	TO-15	449881		

[redacted]

Document Name: Air Sample Condition Upon Receipt	Document Revised: 26APR2016 Page 1 of 1
Document No.: F-MN-A-106-rev.11	Issuing Authority: Pace Minnesota Quality Office

Air Sample Condition Upon Receipt

Client Name: tetra tech -MD

Project #: WO# : 60232865

60232865

Courier: ☑ Fed Ex ☐ UPS ☐ Speedee ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 1Z 871 249 01 9702 7765

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No Seals Intact? ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Tin Can ☐ Other: Temp Blank rec: ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): X0 Corrected Temp (°C): Y0 Thermom. Used: ☐ 888A912167504 ☐ 888A0143310098 ☐ 151401163 ☐ 151401164

Temp should be above freezing to 6°C Correction Factor: 0 Date & Initials of Person Examining Contents: 11.22.16

Type of Ice Received ☐ Blue ☐ Wet ☒ None

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☐ Yes	☑ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☐ Yes	☑ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
[redacted] Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Media: Air Can Airbag Filter TDT Passive				11.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	12.

Samples Received:

Canisters			Canisters		
Sample Number	Can ID	Flow Controller ID	Sample Number	Can ID	Flow Controller ID
	1746				

CLIENT NOTIFICATION [redacted]

Person C [redacted] Date/Time: 11.22.16

cis/trans 1,2

Project Manager Revi [redacted] Date: 11.22.16

Note: Whenever there is [redacted] his form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservati[redacted]

[redacted]

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

60233586

22286

Page: of

[redacted]

Program

UST Superfund Emissions Clean Air Act

Voluntary Clean Up Dry Clean RCRA Other

Location of Sampling by State

Reporting Units: ug/m³ mg/m³ PPBV PPMV Other

Report Level II. III. IV. Other

ITEM #	*Section D Required Client Information AIR SAMPLE ID Sample IDs MUST BE UNIQUE	MEDIA CODE	PID Reading (Client only)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END DATE	COLLECTED COMPOSITE END TIME	Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	Method: PM10	3C Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-13 (PAH)	TO-14	TO-15	TO15 Short List*	Pace Lab ID
1	500 Chestnut			11/17/16	9:30	11/18/16	16:40	-30	-9	2113	FC1078										
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Comments :

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
			[redacted]	11/22/16	0405

SAMPLE CONDITIONS

DMB	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
Temp In °C	Received on Ice	Custody Sealed Cooler	Samples Intact

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM / DD / YY):

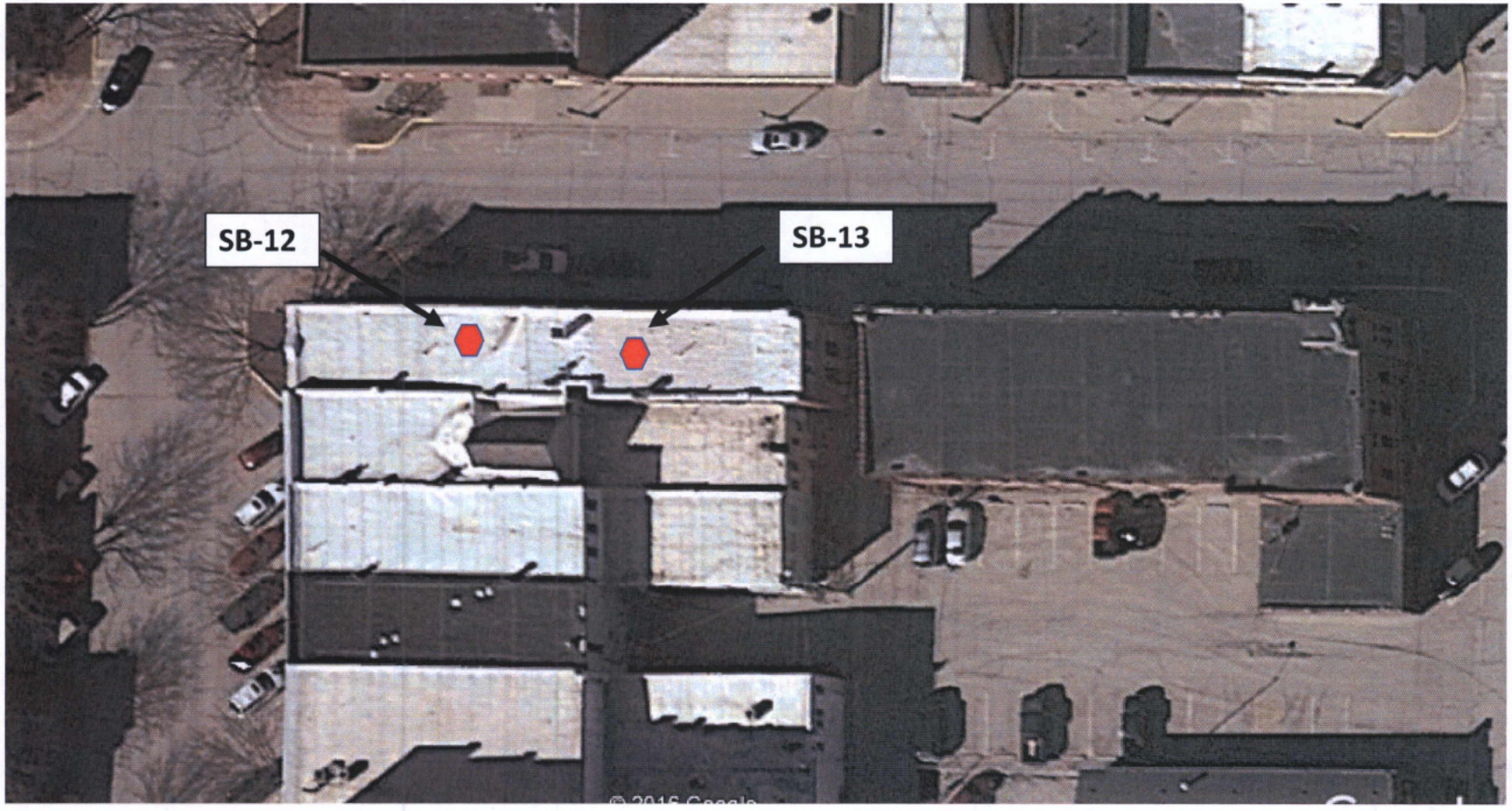
ORIGINAL

[redacted] Air Technical Phone: 612.607.6386

FC046Rev.01, 03Feb2010

ATTACHMENT D

PCE Chestnut Street Site
500 Chestnut Street
February 2017 Sample Locations



ATTACHMENT E

PCE Chestnut Street Site
February 2017 PCE Sample Results

Sample Location on Map	EPA Sample Number	Sample Location-depth	PCE Result
Soil Samples - *results in micrograms per kilogram (µg/kg)*			
SB-12	7358-37	SB-12 (2-3')	<6.7
SB-12	7358-38	SB-12 (5-6')	<5.7
SB-13	7358-39	SB-13 (1-2')	<5.7
SB-13	7358-40	SB-13 (5-6')	<6.7

<	Less than
PCE	Tetrachloroethene

ATTACHMENT F

[redacted]

RELEASE AND ACCEPTANCE FORM

Project Name:	PCE Chestnut	**Project No.**	0059
Project Location:	Atlantic, IA	**Contract # / T.O.#:**	PC7-59
Resident's Name:	[redacted]	**Resident's Address:**	500 Chestnut St.
Description/Reason for Payment: For the flooring that was tore out during the removal activates – reimbursing to return to the building to occupiable conditions, similar to what existed pre-removal			
		Total Payment in form of check No. 184436:	**$6,500.00**

Resident, in consideration and receipt of check no. 184436 in the above-stated amount, does hereby remise, release and forever discharge [redacted] and US Environmental Protection Agency from any and all actions, causes of action, debts, dues, accounts, covenants, agreements, judgments, claims and demands of whatsoever nature or character which said Resident now has or ever has had with [redacted] for above listed description.

Resident hereby agrees that the aforesaid final payment is the final amount due.

In WITNESS WHEREOF, resident has executed this receipt, release, and final discharge on 18 day of May, 2017.

By: [redacted] 5-18-17
(Dated)

Name: [redacted]

Witness Attest: [redacted]
ature)

Form **W-9**
(Rev. December 2014)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

[redacted]ine; do not leave this line blank.

Print or type

[redacted]the following seven boxes:
[redacted]oration ☐ Partnership ☐ Trust/estate
[redacted]n, S=S corporation, P=partnership) ▶ p
[redacted].C; check the appropriate box in the line above for

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):
Exempt payee code (if any) _____
Exemption from FATCA reporting code (if any) _____
(Applies to accounts maintained outside the U.S.)

[redacted]

Requester's name and address (optional)

[redacted]

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Social security number
[redacted] - [redacted] - [redacted]

or

[redacted]

Note. If the account is in more than one name, see the instructions for line 1 and the chart on pa[redacted] guidelines on whose number to enter.

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here | **Signature of U.S. person ▶** [redacted]

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at *www.irs.gov/fw9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding?* on page 2.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.